

WHAT IS CLAIMED IS:

1. A liquid crystal device comprising:

a liquid crystal device substrate including a display region in which pixels are formed in a matrix by a plurality of data lines and a plurality of scanning lines;

5 a peripheral driving circuit connected to at least one of the data lines and the scanning lines on an outer peripheral side of the display region;

a plurality of thin film transistors connected to the data lines and the scanning lines, the thin film transistors each having a channel region;

10 a liquid crystal held between the liquid crystal device substrate and an opposite substrate; and

15 a conductive first light shielding film formed below at least the channel region of each of the thin film transistors so as to overlap with the channel region through an insulation film so that a constant voltage is applied to the first light shielding film.

2. A liquid crystal device according to Claim 1, wherein the first light shielding film comprises channel shielding portions each of which overlaps with the channel region, and wiring portions extending from the channel shielding portions, for applying a constant voltage to the channel shielding portions.

20 3. A liquid crystal device according to Claim 2, wherein each of the wiring portions of the first light shielding film extends from each of the channel shielding portions to an outside of the display region along at least one signal line of the scanning lines and the data lines, and is connected to a constant potential wiring formed in a layer different from the first light shielding film at least through a contact hole of the layer insulation film outside the display region.

25 4. A liquid crystal device according to Claim 2, wherein each of the wiring portions of the first light shielding film is extended from each of the channel shielding portions to an outside of the display region along both signal lines of the scanning lines and the data lines, and is connected to a constant potential wiring formed in a layer different from the first light shielding film at least through a contact hole of the layer insulation film outside the display region.

5. A liquid crystal device according to Claim 3, wherein each of the wiring portions of the first light shielding film is connected to the constant potential wiring through a contact hole of the layer insulation film outside the display region.

5 6. A liquid crystal device according to Claim 5, wherein one end of each of the wiring portions of the first light shielding film is connected to the constant potential wiring through a contact hole of the insulation film.

10 7. A liquid crystal device according to Claim 5, wherein both ends of each of the wiring portions of the first light shielding film are connected to the constant potential wiring through a contact hole of the insulation film.

15 8. A liquid crystal device according to Claim 3, wherein the wiring portions of the first light shielding film comprise branches each of which is extended from each of the channel regions to the outside of the display region along at least one signal lines of the scanning lines and the data lines, and a trunk for connecting the branches outside the display region, the trunk being connected to the constant potential wiring through a contact hole of the insulation film.

15 9. A liquid crystal device according to Claim 8, wherein one end of each of the branches is connected to the trunk.

20 10. A liquid crystal device according to Claim 8, wherein both ends of each of the branches are connected to the trunk.

20 11. A liquid crystal device according to Claim 2, wherein the first light shielding film is connected to capacitance wiring which overlaps with a drain region of each of the thin film transistors to form a storage capacitor through at least a contact hole of the insulation film.

25 12. A liquid crystal device according to Claim 2, wherein the first light shielding film overlaps with a drain region of each of the thin film transistors through the insulation film to form a storage capacitor.

25 13. A liquid crystal device according to Claim 2, wherein the constant potential wiring is connected to a power source line for supplying a power source on the low potential side to the driving circuit.

30 14. A liquid crystal device according to Claim 2, wherein the constant potential wiring is connected to a power source line for supplying a counter electrode potential to a counter electrode of the opposite substrate from the liquid crystal device substrate through a transfer material.

15. A liquid crystal device according to Claim 2, wherein the constant potential wiring comprises a power source line for supplying a ground potential to the peripheral driving circuit.

5 16. A liquid crystal device according to Claim 1, wherein at least one of the liquid crystal device substrate and the opposite substrate comprise a peripheral partitioning light shielding film surrounding the display region.

10 17. A liquid crystal device according to any one of Claim 1, wherein the liquid crystal device substrate comprises a second light shielding film which surrounds the display region on an upper layer side of the channel region of each of the thin film transistors.

18. A liquid crystal device according to Claim 17, wherein the second light shielding film comprises the data lines.

15 19. A liquid crystal device according to Claim 1, wherein the peripheral driving circuit comprises a thin film transistor for a P channel driving circuit, and a thin film transistor for an N channel type driving circuit, the thin film transistors for the P channel type and N channel type driving circuits being formed in a same step as that of manufacturing the thin film transistors.

20 20. A liquid crystal device according to Claim 19, wherein the peripheral driving circuit comprises a wiring layer made of a conductive film formed at a same time as the first light shielding film.

25 21. A liquid crystal device according to Claim 19, wherein the wiring layer made of a conductive film formed at the same time as the first light shielding film is connected to the gate electrodes of the thin film transistors for the driving circuits through at least a contact hole of the insulation film, and overlaps with the channel regions of the thin film transistors for the driving circuits with an area smaller than the area of the gate electrodes of the thin film transistors for the driving circuits through the insulation film on a lower layer side of the channel regions.

30 22. A liquid crystal device according to Claim 19, wherein the wiring layer made of a conductive film formed at the same time as the first light shielding film is connected to the source electrodes of the thin film transistors for the driving circuits through at least a contact hole of the insulation film, and overlaps with the channel regions of the thin film transistors for the driving circuits through the insulation film on a lower layer side of the channel regions.

23. A liquid crystal device according to Claim 1, wherein the first light shielding film comprises a metallic film of tungsten, titanium, chromium, tantalum, or molybdenum, or a metal alloy film which may be a metal silicide film.

5 24. A liquid crystal device according to Claim 1, wherein the opposite substrate comprises a third light shielding film formed corresponding to the pixels.

25. A liquid crystal device according to Claim 24, wherein the third light shielding film is formed to cover at least the first light shielding film.

10 26. A liquid crystal device according to Claim 1, wherein the opposite substrate comprises a microlens formed in a matrix in correspondence with the respective pixels.

27. A projection type display device comprising a liquid crystal device according to Claim 1, wherein the light emitted from a light source is modulated by the liquid crystal device, and the modulated light is enlarged and projected by projection optical means.

15 28. A method of manufacturing a liquid crystal device, comprising:
forming a liquid crystal device substrate including a display region in which pixels are formed in a matrix by a plurality of data lines and a plurality of scanning lines;
forming a peripheral driving circuit connected to at least one of the data lines and the scanning lines on an outer peripheral side of the display region;
20 forming a plurality of thin film transistors connected to the data lines and the scanning lines, the thin film transistors each having a channel region;
disposing a liquid crystal between the liquid crystal device substrate and an opposite substrate; and
25 forming a conductive first light shielding film below at least the channel region of each of the thin film transistors so as to overlap with the channel region through an insulation film so that a constant voltage is applied to the first light shielding film.

29. A method of manufacturing a liquid crystal device, according to Claim 30 28, further comprising forming a contact hole connecting the first light shielding film and a wiring for supplying a constant voltage thereto, the wiring formed at a same time as formation of contact holes for connecting the data lines and the source regions of the thin film transistors.